

Ocean Planning Goal	Tool or strategy	Data or Modeling Need	Environmental	Social	Economic	In 5 yrs?
Effective Stewardship	Habitat mapping and classification	Finish acoustic seafloor mapping, incorporating groundtruthing measures and protocols as appropriate (grab samples, photo/videography, etc).	X			YES
		Use acoustic and laser (bathymetric LIDAR) seafloor mapping data to produce seamless topo/bathy map of coast and planning area.	X			YES??
		Use acoustic and laser data from shallow areas for habitat mapping (LIDAR will also be used for inundation studies relative to sea level rise).	X	X	X	YES??
		Continue development of habitat classification model suitable for the planning area, building upon previous work done by CZM and concepts and methodology in the EVI	X			Yes??
		Identify areas of high infaunal diversity and abundance using systematic grabs and photos.	X			YES
		Mapping and long-term monitoring of invasive species in (and adjacent to) planning area (perhaps on new structures in management areas, as a first start?)	X			Yes??
		Gather sediment data through directed surveys.	X			YES??
		Map kelp and other macroalgae through aerial photography analysis and groundtruthing, dive surveys, grabs, sleds, video, etc.	X			YES
		Define and identify rare habitat areas based upon habitat mapping/ classification	X			YES
		Conduct a comprehensive evaluation of contaminated sediment in planning area (perhaps this could be a part of the habitat mapping program?)	X			YES??

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Effective Stewardship	Ecological assessment and valuation (additional data and refinement of existing data)	Review rationale in the protocol for the EVI for included datasets and scoring to determine changes, if any, and opportunities to address gaps	X			YES
		Identify endangered sea turtle habitat in MA	X			YES
		Identify major avifauna flyways (heights/widths/locations).	X			YES
		Determine seabird use of planning area w/ directed surveys.	X			?
		Identify major bat flyways (heights/widths/locations).	X			?
		Review fish species incorporated into EVI to determine if additional species desirable	X			Yes
		Continue developing abiotic datasets for incorporation into EVI (seafloor mapping, circulation modeling—fronts, etc.)	X			Yes
		Identify areas of high species/habitat diversity	X			YES
		Improve the maps showing existing mussel sites	X			YES
		Map the potentially “new, high density” bay scallop area (near Cleveland Ledge) in Buzzards Bay.	X			YES
		Refine tern foraging sites by systematic surveys.	X			?
		Refine whale foraging (esp. right whale) sites by performing statewide systematic surveys (i.e., not relying upon whale watch boat observations).	X			?

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		Continue eelgrass mapping; refine effort by getting good understanding of patch edges map all of coast each time, develop survey methods to capture beds < the current minimum mapping unit (20 m).	X			YES
		Long-term monitoring to verify or adapt colonial bird nesting sites.	X			NO
		Long-term monitoring to verify or adapt seal haul out sites.	X			NO
		Refine the 0.3 nm buffer around colonial bird nesting sites.	X			?
		Refine the 0.3 nm buffer around seal haul outs.	X			?

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Effective stewardship	Compatibility analysis and identification of use areas	Identify, through directed surveys, the critical economic areas for recreational fisheries.		X	X	YES
		Identify, through directed surveys, the critical ecological areas for recreational fisheries.	X			?
		Refine studies to identify recreational fishery destination areas and as a second step, the significant interconnections between shore access points and these destinations.		X	X	YES
		Refine studies to identify destination areas for commercial fisheries and as a second step, the significant interconnections between shore access points and these destinations.		X	X	YES
		Refine, through directed surveys, the critical economic areas for commercial fisheries.		X	X	YES
		Refine, through directed surveys, the critical ecological areas for commercial fisheries.	X	X	X	?
		Review technology advances (renewable energy, aquaculture) for how such advances may result in compatibility issues. For example: turbine spacing and commercial fishing gear; rec fishing opportunities may be enhanced by monopiles if such structure attract fish; wave energy devices may effect coastlines; .	X	X	X	YES

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		Map shellfish aquaculture sites.	X		X	YES
		Study management activities (anchor sets, ship wakes, dredging plumes, spinning blades (water and air)) to determine spatial extent of permanent and/or temporary impacts, to determine necessary buffers	X		X	Yes
		Conduct an ecological risk/vulnerability assessment for habitats in MA.	X		X	YES
		As suggested by the Ocean Recreational and Cultural Services Workgroup, regarding shipwrecks, in the BUAR database, complete data entry for all fields in database (includes adding AWOIS data and private-sector shipwreck data), convert all point data to a uniform format, and create a geo-referenced sensitivity map.	X	X		Yes
		As suggested by the Renewables Workgroup, identify potential areas for tidal energy that were not fully explored in the EPRI report, esp. in Buzzards Bay.	X		X	Yes
		Investigate if monopiles (and other structures) result in enhanced habitat	X		X	yes
		Conduct regional sediment transport studies	X			??
		Pursue ecosystem service value modeling	X	X	X	??

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Effective Stewardship	Develop and implement climate change adaptation measures	Monitor pH and attempt to link decreased pH to loss of shellfish shell thickness (and thus increased mortality)	X		X	NO
		Monitor sea level rise at state owned structures (or on monopiles?)			X	NO
		Conduct detailed elevation and inundation studies.	X	X	X	YES, at some locations.
		Monitor sea surface temperature (SST) and temperatures profiles and model how changes of certain magnitudes might shift certain fish ranges (e.g., cod, winter flounder).	X	X	X	NO
		Conduct model/lab studies of decreased pH or increased SST (how quickly changes will occur, where biggest changes, what species and life stages most affected).	X			?

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Adaptable Framework	Management measure evaluation and refinement	Evaluation plan for each planned activity (either individual management activity (wind turbine construction) or species activity (right whale seasonal foraging) that defines an SSU area) to ensure that planning areas are appropriate, adequate, and reasonable given new data and understanding of the impacts (if a management activity) or population (if a species) or sensitivity/importance (if a habitat type). This involves ongoing evaluation of management activities and management area edges via indicators and/or performance measures .		X		x
		Model stressors (natural and anthropogenic) that originate outside of the planning area for their effect on ocean resources and/or uses. Modeling should be developed and performed in such a way so as to enable consideration of potential refinements to management measures.	X	X	X	Partially
	Data management	Develop data management measures and protocols to address ensure data utility is maximized: data quality management, deliverance of data to managers and/or other users,	X	x	X	x

